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DETERMINANTS OF THE LEVEL OF INFORMALIZATION OF ENTERPRISES: SOME EVIDENCE FROM ACCRA, GHANA

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Based on the recognition that enterprises operate at different levels of informality, this paper evaluates the determinants of their degree of informalization. To do so, a 2016 survey of the varying degrees of informalization of 171 entrepreneurs in Ghana is reported. The finding is that only 21 percent of enterprises were wholly informal and 16 percent wholly formal. Nearly two-thirds (63 percent) were neither wholly informal nor wholly formal. Higher levels of informalization are significantly associated with younger entrepreneurs, those with lower levels of educational attainment, lower household incomes and younger enterprises. It is also significantly associated with the wider institutional compliance environment. Higher levels of informality are present among entrepreneurs unaware of the need for registration, who lack vertical trust (i.e., do not believe the state does anything for them, and perceive there to be public sector corruption), view informality as normal (i.e., a normal practice in their family) and view all similar businesses as operating informally (i.e., lack horizontal trust). The paper concludes by discussing the theoretical and policy implications.

Keywords: Entrepreneurship; informal sector; development economics; Ghana.

1. Introduction

Over the past decade or so, the study of entrepreneurship in the informal sector has firmly established itself as a new sub-discipline of entrepreneurship scholarship (Chepureenko, 2018; Coletto and Bisschop, 2017; Dau and Cuervo-Cazurra, 2014; Karki and Xheneti, 2018; Khan and Quaddus, 2015; Kistruck *et al.*, 2015; Mannila and Eremicheva, 2018; Lin, 2018; Siqueira *et al.*, 2016; Thai and Turkina, 2014; Webb *et al.*, 2009, 2013, 2014). In recent years, this scholarship has begun recognizing that enterprises are not either fully

formal or fully informal. Instead, there has been recognition of a spectrum of informality with wholly formal enterprises at one end of this continuum and wholly informal enterprises at the other (Ketchen *et al.*, 2014; Siqueira *et al.*, 2016; Williams *et al.*, 2017). The result is an understanding that entrepreneurs and enterprises operate at different levels of informality. They adhere to some formal rules and regulations but not others, such as registering their enterprise, registering for tax purposes and keeping formal accounts (Andrade *et al.*, 2013; Benjamin and Mbaye, 2014; Bruhn and McKenzie, 2013; Kanbur, 2015; Ram *et al.*, 2002a,b; Steel, 2017; Verreyne *et al.*, 2014; de Villiers Scheepers *et al.*, 2014; Williams, 2006; Williams and Martinez, 2014; Williams *et al.*, 2016). Nevertheless, few studies to date have sought to identify the determinants of the level of informalization of enterprises, with one notable exception being a study of enterprises in Pakistan (Williams and Shahid, 2016; Williams *et al.*, 2016).

To fill this gap, the aim of this paper is to evaluate the determinants of informalization of enterprises. In doing so, this paper advances knowledge in three ways. First and theoretically, it seeks to advance understanding of the determinants of the level of informality of entrepreneurs and enterprises. Until now, with the exception of a study of micro-enterprises in Pakistan (Williams and Shahid, 2016), this has not been investigated. Second and empirically, it provides one of the first empirical studies of the degree of informalization of entrepreneurs and enterprises, and the first known study in Africa, by reporting a 2016 survey of the varying degrees of informalization of 180 entrepreneurs in Ghana. Third and from a policy perspective, it advances knowledge by identifying the characteristics of enterprises at varying levels of informality so tailored policy initiatives can be developed to move enterprises along the spectrum from informality to formality.

To achieve this, the first section reviews the literature on informal sector entrepreneurship and enterprise in terms of what is known about its magnitude, characteristics and determinants. Finding that despite a burgeoning literature on this subject, scholarship has not analyzed the degrees of informalization of enterprises and the determinants of their level of informality, the second section then introduces the data and methodology here used to do so. Reporting a 2016 survey of 171 enterprises in the city of Accra in Ghana, ordered logistic regression and post-estimation exercises are used to identify the determinants of the level of informality of enterprises. The third section then reports the results. Finding that this is determined by various characteristics of the entrepreneur and enterprise and by entrepreneurs' motives, and the wider formal, and institutional compliance environment, the final section explores the implications for theory and policy.

To define the level of informality of enterprises, the starting point in this paper are the recommendations of the 15th and 17th International Conferences of Labor Statisticians (ICLS). These define an informal sector enterprise as a small or unregistered private unincorporated enterprise (Hussmans, 2005). Small refers to the numbers employed being below a specific threshold, determined by national circumstances. An unregistered enterprise is one not registered under specific forms of national-level legislation (e.g., factories' or commercial acts, tax or social security laws, professional groups' regulatory

acts). Meanwhile, a private unincorporated enterprise in this ICLS definition is an enterprise owned by an individual or household not constituted as a separate legal entity independent of its owner, and where no complete set of accounts is available that permit a financial separation of the enterprise from the other activities of its owner (Hussmans, 2005; ILO, 2011, 2012). Therefore, following the ICLS definition, this paper identifies an informal enterprise as a small private enterprise that is either: (i) not constituted as a separate legal entity independent of its owner; (ii) not registered with the tax authorities and/or (iii) no complete formal accounts are kept that financially separate the enterprise from the other activities of its owner/s. This definition enables enterprises to be analyzed according to their degree of informalization.

2. Informal enterprise and entrepreneurship: Magnitude, characteristics and determinants

With the emergence of a burgeoning literature on entrepreneurship in the informal sector, understanding of the magnitude, characteristics and determinants of enterprise and entrepreneurship in the informal sector has begun to significantly advance over the past decade or so.

2.1. Magnitude of informality

The informal sector is equivalent to 40-60 percent of GDP in developing economies and around 10-15 percent in developed economies (Schneider and Williams, 2013). Moreover, nearly two-thirds of global enterprises are estimated to start up unregistered (Autio and Fu, 2014) and at least one-half of all enterprises globally are unregistered (Acs *et al.*, 2013). If the uncalculated number of formal enterprises underreporting turnover is included, a higher proportion of enterprises are in the informal economy (Ketchen *et al.*, 2014; Siqueira *et al.*, 2016; Williams, 2018). The upshot is that enterprises in the informal sector are not some small proportion of all enterprises. The majority of enterprises operate in the informal sector, as do some 60 percent of the world's workforce have their main employment in the informal economy (ILO, 2018).

It is similarly the case in Ghana, the subject of this paper. Osei-Boateng and Ampratwum (2011) estimate that 80 percent of Ghanaian workers are in the informal economy and by 2018, this was estimated to be 86 percent (Mahadea and Zogli, 2018), with similar magnitudes in other studies (Adom, 2014; Adom and Williams, 2012). Meanwhile, the Ghana Statistical Service estimate that out of the GH¢256 billion total GDP in 2017, GH¢73.3 billion (28.6 percent) is from the informal economy. They also estimate that out of 638,000 commercial institutions in Ghana, 395,977 (62 percent) are in the informal economy in the sense that they are businesses not registered with the Registrar-General's Department and do not keep formal financial accounts (B&FTOnline, 2018). Therefore, in Ghana, informality is normality, not the exception.

2.2. *Characteristics of informal enterprise and entrepreneurship*

Although the vast majority of studies of informality are focused on estimating its size, recent years have seen a growing number of attempts to understand the characteristics of entrepreneurs and enterprises operating in the informal sector not only in Ghana in particular (Adom, 2014; Akorsu and Akorsu, 2009; Koto, 2015; Obeng-Odoom, 2016; Ofori, 2009) but also more widely (Aidis *et al.*, 2006; Bureau and Fendt, 2011; Kahn, 2017; Ram *et al.*, 2017; Siba, 2015; Thai and Turkina, 2014; Webb *et al.*, 2013; Williams and Krasniqi, 2018; Williams *et al.*, 2017). Although there are mixed findings on whether women participate more than men (Adom, 2014; Agarwala, 2009; Obeng-Odoom, 2016; Ogando *et al.*, 2017; Petersen and Charman, 2018; Williams, 2018; Williams and Gurtoo, 2012), this is not the case with age. A U-shaped curve has been identified in relation to the age of owners of informal enterprises, with younger and older persons being more likely to operate informally, both in Ghana (Adom and Williams, 2014; Akorsu and Akorsu, 2009) and elsewhere (e.g., Asian Development Bank, 2010; Williams and Martinez, 2014). Often, this is explained in terms of the lack of formal employment and means of welfare support for younger and older age groups respectively. Informal enterprise is also found to be concentrated among lower-income populations (Ahmad, 2008; Akorsu and Akorsu, 2009), although this has been argued to differ across populations, not least depending upon the level of social protection available (Williams, 2014, 2017). In economies such as Ghana with large informal sectors, although illiteracy is often associated with informality (Akorsu and Akorsu, 2009; Koto, 2015; Ofori, 2009), those with higher levels of formal education and training are not found to more commonly operate formally as might be supposed. Rather, they also operate informally and to move from being apprentices to self-employed, and to receive higher wages (Adom, 2012; Adom and Williams, 2012; Koto, 2015) as is also found elsewhere (Gurtoo and Williams, 2009).

Examining the business characteristics of informal enterprises meanwhile, a recurrent finding is that the older the enterprise, the greater is the likelihood it is formal (Thai and Turkina, 2014; Williams and Martinez, 2014; Williams *et al.*, 2017). Sectorial variations also exist with informality more prevalent in the agricultural, distribution and construction sectors, with lower levels of informality in other sectors such as manufacturing (Asian Development Bank, 2010; Gurtoo and Williams, 2009; ILO, 2012). In Ghana, similar tendencies are identified (Adom, 2014; Obeng-odoom, 2016; Osei-Boateng and Ampratwum, 2011).

2.3. *Determinants of enterprise and entrepreneurship in the informal sector*

Besides advances in understanding the magnitude and characteristics of informality, there has been progress on explaining the reasons for operating informally rather than formally. On the one hand, an exclusion theorization has explained informal enterprise as connected with the advent of a deregulated open world economy (Castells and Portes, 1989; Davis, 2006; Meagher, 2010; Slavnic, 2010; Taiwo, 2013). A lack of state involvement in social protection, coupled with increased outsourcing and subcontracting to reduce production

costs, is said to be driving populations into entrepreneurship as a survival strategy and last resort (Chen, 2012; ILO, 2014; Kantor, 2009; Meagher, 2010; Parizeau, 2015; Taiwo, 2013). This view of informal entrepreneurs as necessity-driven is common in scholarship on Ghanaian informal entrepreneurship (e.g., Akorsu and Akorsu, 2009; Koto, 2015).

On the other hand, other scholars have purported that informality is a result of a voluntary decision by populations to “exit” the formal economy, rather than a product of involuntary exclusion (Cross, 2000; Snyder, 2003). This is asserted by a range of commentators, from neo-liberals (De Soto, 1989, 2001) to institutional theorists (Webb *et al.*, 2009, 2013). For neo-liberals, the drivers causing populations to voluntarily enter informal entrepreneurship are high tax rates (Buehn and Schneider, 2010), public sector corruption (Ahmad, 2009; Buehn and Schneider, 2010; Friedman *et al.*, 2000) and stifling bureaucracy and over-regulation (De Soto, 1989).

For institutional scholars, there is an alternative explanation for ‘exit.’ In institutional theory, institutions are the ‘rules of the game’ (North, 1990). All societies have both formal institutions (law and regulations) that prescribe what is acceptable from a state perspective, as well as informal institutions, which are the norms, values and beliefs of citizens, entrepreneurs and workers about what is acceptable (North, 1990; Webb *et al.*, 2014). In the first wave of institutional theory, scholars asserted that informality was a product of formal institutional failings, such as the existence of formal institutional voids (Feige, 1990; Puffer *et al.*, 2010; Sutter *et al.*, 2017), including poor quality government and a lack of social protection. However, a second wave of institutional theory asserts that formal institutional failings only lead to informality if they produce an asymmetry between the formal and informal institutions (De Castro *et al.*, 2014; Siqueira *et al.*, 2016; Thai and Turkina, 2014; Vu, 2014; Webb *et al.*, 2009, 2013, 2014; Williams and Bezeredi, 2019; Williams and Gurtoo, 2017; Williams and Horodnic, 2015a,b,c, 2016a,b; Williams and Kosta, 2018; Williams and Shahid, 2016; Williams *et al.*, 2017). Therefore, entrepreneurs are less likely to operate in the informal economy in economies where there is a close alignment between formal and informal institutions. The outcome is that differences in the size of the informal sector across countries are a reflection of varying levels of institutional incongruence (Williams *et al.*, 2017). In recent years, this has further developed. It has been suggested that institutional incongruence in the form of trust in institutions, operates at a micro-level (personal norms), meso-level (trust in others similar and close to oneself, namely horizontal trust) and macro-level (trust in state institutions, namely vertical trust) (Horodnic and Williams, 2019). Until now, most studies on institutional incongruence have only focused upon vertical trust. Personal norms and horizontal trust have received little attention as determinants of informality.

Although political economy scholars explain informality in terms of exclusion (e.g., Slavnic, 2010; Taiwo, 2013), and neo-liberals in terms of exit (De Soto, 1989), recent years have seen a move beyond viewing informal enterprises as either universally necessity-driven or exit-driven. Scholars have begun to investigate the ratio of exit-driven to exclusion-driven informal enterprises (Williams 2008, 2009). The finding is that exclusion motives are more common in relatively deprived populations and exit in relatively affluent

groups (Gurtoo and Williams, 2009), and exit motives more prominent in developed countries and exclusion motives in developing economies (Maloney, 2004). In a seminal piece of scholarship on urban informal labor markets in developing economies, Fields (1990, 2005) portrays the existence of an exit-driven “upper tier” and a necessity-driven “lower tier.” Recent studies suggest this applies in all geographical areas and at all spatial scales.

However, the problem with the vast majority of studies is that they evaluate informality as separate and discrete from formality. First, most studies evaluate how many enterprises are informal rather than how many display differing levels of informality; second, the characteristics of informal enterprises and entrepreneurs rather than the characteristics of enterprises and entrepreneurs displaying differing levels of informality; and third, the motives of informal entrepreneurs rather than motives at differing levels of informality. There are only a few notable exceptions. A qualitative study by De Castro *et al.* (2014) of 30 enterprises in the Dominican Republic recognizes a continuum of informality and starts to unpack the characteristics and reasons for enterprises operating at varying levels of informality. A quantitative study in Pakistan identifies that 62 percent of entrepreneurs operate wholly informal enterprises, 31 percent largely informal and seven percent largely formal enterprises (Williams and Shahid, 2016). It also reveals that the determinants of the level of informality are more the characteristics of the entrepreneur and enterprise, rather than the motives of the entrepreneurs (Williams *et al.*, 2016). Therefore, to fill these lacunae, this paper seeks understanding of the proportion, characteristics and motives of enterprises and entrepreneurs operating at varying levels of informality, by reporting a 2016 survey conducted in the city of Accra in Ghana.

3. Data, Variables and Methods

3.1. Data

To evaluate the determinants of the degree of informalization of enterprises, this paper reports a 2016 survey of 171 enterprises in the city of Accra in Ghana. Accra is the capital city of Ghana, located in the Greater Accra region. The 2010 Census of Population estimates that the population of Ghana is 24,658,823, of which 4,010,054 live in the Greater Accra region (16.3 percent of the country’s population).

To select participants for the survey, a maximum variation sampling method has been used. This sampling method is used commonly as a substitute for random probability sampling in contexts where the target population is invisible or relatively inaccessible (Adom and Williams, 2012; Williams and Gurtoo, 2012). Within Accra, maximum variation sampling was used to select five contrasting neighborhood types ranging from very affluent to very deprived communities. These neighborhoods are East Legon and Achimota (affluent), Madina and Haatso (semi-affluent) and Nima (deprived).

Within each of these five communities, a spatially stratified sampling technique was then applied (Adom and Williams, 2012) to select some forty households in each

neighborhood to survey. To do so, the number of business zones was estimated and the researchers then selected the number of businesses to be interviewed in each zone to achieve a stratified sample. Within each zone, if five enterprises needed to be surveyed, and it was estimated that there were 100 enterprises, then every 20th enterprise in the street was surveyed. If there was no response, then the 19th was approached, followed by the 21st. The outcome was that this sampling frame generated data from a stratified sample of enterprises from a diverse array of zones in a heterogeneous array of neighborhoods. This sampling method prevented studying entrepreneurs only of a specific type who might have similar reasons for operating at varying levels of informality.

The interviews were face-to-face and comprised a structured questionnaire, which included both closed- and open-ended questions. In the interview schedule, a gradual approach was adopted toward more sensitive questions that were only asked later in the interview after some rapport had been established. First, demographic data was gathered on gross household income, employment status, employment histories and various socio-demographic characteristics such as age and gender. Next, they were asked about the characteristics of their business, such as the type of product or service sold, premises, business tenure and reasons for starting the business. The third section then collected data on registration issues, such as the types of registration possessed, reasons for not registering, the perceived advantages of registration, and the level of difficulty of registering their businesses, tax morale, type of accounts they keep for their business and why they chose to operate this enterprise. The final section then covered issues on the wider business environment, local competitors and tax issues.

3.2. Variables

3.2.1. Dependent variable

Based on the definition of an informal sector enterprise established by the 15th International Conference of Labor Statisticians in 1993 (Hussmans, 2005), three variables are used to construct an index of the level of informality of an informal enterprise, namely: (1) its legal status; (2) its tax registration status and (3) the types of accounts kept (see Table 1). This enables a four-point scale of the level of informality of enterprise to be constructed ranging from totally formal through low levels of informality and high levels of informality to totally informal.

In the context of Ghana, whether an enterprise is a separate legal entity is determined by whether it is registered with the Registrar-General's Department, to be registered for tax they must be registered with the tax department and whether they keep formal accounts is measured by whether they keep more than\ no written account, informal records or simplified accounts.

Table 1. Levels of informality in Accra, Ghana (N = 171)

Informality level	Legal status as company	Tax registration	Formal accounts	Score
<i>Totally formal</i>	Yes	Yes	Yes	3
<i>Low level of informality</i>				2
Situation A	No	Yes	Yes	1
Situation B	Yes	No	Yes	
Situation C	Yes	Yes	No	
<i>High level of informality</i>				
Situation D	No	No	Yes	0
Situation E	No	Yes	No	
Situation F	Yes	No	No	
<i>Totally informal</i>	No	No	No	0

3.2.2. Independent variables

Drawing upon the above review of the characteristics of informal entrepreneurs and enterprises, as well as the drivers of informality, informal entrepreneurs' characteristics are examined; second, the characteristics of informal enterprises are explored. Third, we examine whether they adopt exit and exclusion rationales and finally, variables related to the degree of formal and informal institutional asymmetry are reviewed. The socio-demographic characteristics of entrepreneurs examined were:

- *Gender*: a dummy variable with value 1 indicating the entrepreneur is a woman and 0 when it is a man.
- *Age*: a categorical variable with three categories for those aged 15 to 24, 25 to 35 and over 35 years old.
- *Education*: a categorical variable with six categories for those with no education, primary, junior high school, senior high school, diploma and university education.
- *Adults in household*: a dummy variable with two categories, namely one to three adults, and four or more adults living in the household.
- *Main earner*: a dummy variable with value 0 when the respondent is the main earner of the family and 1 otherwise.
- *Household income*: a categorical variable measuring the total monthly household income in five categories: Less than 500C, 501-1000C, 1001-1500C, 1501-2000C and above 2000C.

The enterprise characteristics examined were:

- *Firm age*: a categorical variable with four categories, namely less than five years old, five to ten years old, eleven to fifteen years old and over fifteen years old.
- *Firm sector*: a categorical variable with three categories for manufacturing, retail and hotel catering.
- *Started business*: a categorical variable with three categories for whether the entrepreneur started the business alone, with other partners or with family members.
- *Sources of financing*: a dummy variable for the self-reported main sources of funding for the business with value 1 for self-funded and 0 otherwise.

- *Applied for a bank loan*: a dummy variable with value 1 for those entrepreneurs reported they have applied for a bank loan to finance the enterprise's activities and 0 otherwise.

The motives of the entrepreneurs for operating the enterprise were examined using the following variables:

- *Exclusion drivers*: two indicators were examined of whether necessity-oriented rationales prevail. These are two dummy variables gathering the responses to whether a main reason was that the respondent *could not get a regular job*, or *needed additional income*. In both cases value 1 refers to those responding yes to the questions and 0 otherwise.
- *Exit drivers*: six indicators were examined of whether voluntary exit rationales prevail. These are dummy variables gathering the responses to whether a main reason for starting the business was that the respondent had *resentment*, thought *taxes were too high*, that there was a *high registration cost*, that there was a *complicated registration system*, thought there was a *corrupt registration system*, or there was an unawareness of registration. In all case, value 1 refers to those responding yes, and 0 otherwise.

Finally, variables were examined that measure the degree of asymmetry between formal and informal institutions in Ghana.

- *Tax morale*: a Likert scale categorical variable with value 1 if the respondent is of the opinion it is "highly acceptable" to operate an unregistered business, value 2 if s/he holds the opinion it is "somewhat acceptable" to operate informally and value 3 if s/he believes it is "not acceptable" to operate informally. This measures the norms, values and beliefs of informal institutions regarding informality and whether there is symmetry between these informal institutions and the codified laws and regulations of the formal institutions.
- *Common practice in family*: a dummy variable with value 1 if the respondent believes it is a common practice in the family to operate in the informal economy or 0 otherwise.
- *Similar businesses not registered*: a dummy variable with value 1 if the respondent believes all similar businesses to their enterprise are not registered or 0 otherwise.

3.3. Methods

Because the dependent variable is an ordinal one, we use ordered logistic regression. This is preferable to using a simple OLS technique because the assumptions of a non-interval variable would be violated and multinomial regression in which case, the information contained in the ordering of the dependent variable would be lost. Indeed, the brant test to check the assumption of parallel regressions holds and reports an insignificant χ^2 equal to 57.2 ($p > 0.05$) for the full specification used in model 5 in Table 4.

Besides presenting the descriptive statistics, the multivariate analysis uses a series of additive ordered logistic regressions where first, model 1 includes only the socio-demographic characteristics of the entrepreneurs and their association with the level of informality of enterprises. Second, and in model 2, we add the characteristics of enterprises. Third, and in model 3, we add the exclusion rationales. Fourth, and in model 4, we add the exit rationales. Fifth and in model 5, we add the institutional asymmetry variables.

To outline the predictive odds of informality for a representative enterprise and entrepreneur (based on the modal and mean values of the variables used in the multivariate ordered logistic regressions), post-estimation exercises are presented of specific drivers of the level of informality to show their influence on the level of informality.

4. Results

4.1. *Descriptive findings*

Of the 170 enterprises surveyed, 21 percent were totally informal enterprises and sixteen percent totally formal (see Table 2). Therefore, nearly two-thirds of the enterprises were neither totally informal nor totally formal (i.e., 33 percent displaying a high level of informality and 30 percent a low level of informality). This reinforces the need to analyze the degree of informalization of enterprises in future studies. The majority of enterprises are not either wholly formal or wholly informal but rather, are partially (in)formal.

What are the characteristics of entrepreneurs and enterprises at varying levels of informality? As Table 2 reveals, totally informal enterprises are more likely to be operated by female entrepreneurs (61 percent of all totally informal enterprises) while totally formal enterprises are more likely to be operated by men (52 percent of all enterprises operating on a totally formal basis). Totally informal enterprises are also more likely to be operated by younger entrepreneurs, while totally formal enterprises are more likely to be operated by older entrepreneurs. The lower the educational level of the entrepreneur the more likely they are to operate a totally informal business. As the education level of the entrepreneur increases, the more likely is it that some elements of their enterprise will be formal. It is similarly the case that totally informal enterprises are more likely to be operated by entrepreneurs living in households with a smaller number of adults in them, by entrepreneurs who are the main income earner and by entrepreneurs in lower-income households. Meanwhile, totally formal enterprises are more likely to be operated by entrepreneurs living in households with a higher number of adults in them, by entrepreneurs who are not the main income earner and those in higher-income households.

Analyzing the characteristics of enterprises at varying levels of informality, younger enterprises have a higher level of informality. Manufacturing enterprises are more likely to have higher levels of formality than retail and hotel catering enterprises. Those who started businesses alone are also more likely to have higher levels of informality than those who started their enterprise with other family members, as are those who self-funded their business, while those who applied for a bank loan are more likely to display higher levels of formality.

Table 2. Characteristics of entrepreneurs and enterprises in Accra, Ghana: by informality level (%; N = 171)

Characteristics	Totally informal	High level of informality	Low level of informality	Totally formal
<i>All respondents</i>	21	33	30	16
Gender				
Male	39	54	51	52
Female	61	46	49	48
Age				
15–24	6	9	0	0
25–35	58	56	53	44
35+	36	35	47	56
Education				
Never been to school	14	12	2	0
Primary	5	2	4	0
Junior high school	25	19	6	8
Senior high school	36	37	21	11
Diploma	3	16	22	11
University	17	14	45	70
Adults in household				
One to three	64	63	51	44
Four or more	36	37	49	56
Main income earner				
No	53	51	45	48
Yes	47	49	55	52
Household income per month ¹				
less than 500 ₵	19	14	8	7
501–1000 ₵	31	34	18	7
1001–1500 ₵	28	19	12	15
1501–2000 ₵	11	19	19	19
Above 2000 ₵	11	14	43	52
Firm's age				
less than 5 years	36	32	25	26
5–10 years	58	56	61	63
11–15 years	3	7	10	0
Above 15 years	3	5	4	11
Sector of activity				
Retail	67	79	68	70
Manufacturing	8	10	14	19
Hotel catering	25	11	18	11
Business started				
Alone	86	84	76	74
With business partners	6	2	6	7
Family	8	14	18	19
Self-funding				
No	22	14	12	15
Yes	78	86	88	85
Applied for a bank loan				
No	75	75	61	63
Yes	25	25	39	37

Notes: ¹ ₵ = GHS (Ghanaian Cedi)

Source: 2016 survey of Accra, Ghana

Therefore, why do entrepreneurs operate at varying levels of informality? To understand this, a range of questions were asked that reflect the rationales asserted by the exclusion and exit perspectives and that also measure entrepreneurs' views of the wider compliance environment regarding informality in Ghana. As Table 3 reveals, and contrary to the exclusion perspective that informal entrepreneurship in developing countries is necessity-driven, this is not universally valid. Neither is it more prevalent among totally informal entrepreneurs. Indeed, only 19 percent of totally informal entrepreneurs state they do this because they need additional income but 30 percent of totally formal entrepreneurs state this. In consequence, it does not appear that necessity-driven motives are more associated with informal entrepreneurship.

Table 3. Main rationales to operate informally in Accra, Ghana: by informality level
(%, N = 171)

Variables	Totally informal	High level of informality	Low level of informality	Totally formal
<i>Exclusion perspective</i>				
Could not get a regular job	44	35	43	41
Needed additional income	19	25	25	30
<i>Exit rationales</i>				
Resentment (state does nothing for me)	31	9	14	11
High taxes	53	37	51	67
High registration cost	39	35	39	33
Complicated registration system	36	40	29	22
Corrupt registration system	92	82	69	56
Unawareness of registration	81	93	86	100
<i>Social climate for doing business informally</i>				
<i>Micro-level trust (personal norms)</i>				
Acceptable to run an unregistered business				
Highly acceptable	17	7	10	11
Somewhat acceptable	61	65	45	67
Not acceptable	22	28	45	22
<i>Mezzo-level trust</i>				
Common practice in the family	11	19	6	4
<i>Macro-level trust</i>				
All similar businesses are not registered	92	86	82	85

Source: 2016 survey of Accra, Ghana

Instead, some exit rationales are more common among those operating on a totally informal basis. Totally informal entrepreneurs are likely to state they do so because they view the registration system as corrupt (91 percent), are unaware of registration requirements (81 percent) and taxes are high (53 percent). For those operating on a highly informal basis, who largely register their business but mostly opt not to formally register with the tax office (or keep formal accounts), the most common exit rationales are a lack of awareness of registration requirements (93 percent), a corrupt registration system (82

percent) and a complicated registration system (40 percent). Those with a low level of informality in that their business has legal status and they are registered with the tax office but do not keep formal accounts, most commonly cite the exit rationales of a lack of awareness of registration requirements (86 percent), a corrupt registration system (69 percent) and high taxes (51 percent). Comparing the commonality of these motives at differing levels of informality, a corrupt registration system is more likely to be stated by entrepreneurs at higher levels of informality, as is a complicated registration system and resentment (i.e., believing “the state does not do anything for the people so why should we obey the law”).

There appears to be little difference in the degree to which entrepreneurs who operate at varying levels of informality deem running an unregistered business acceptable. However, slightly more entrepreneurs at greater levels of informality state it is a common practice in their family to operate informally, and more entrepreneurs at greater levels of informality state that all other similar businesses are unregistered (i.e., there is a lack of horizontal trust).

4.2. Multivariate analysis

Table 4 reports the results of an ordered logistic regression analysis. This examines whether these associations are significant when other variables are introduced and held constant. It evaluates the association between the level of informality and the characteristics of entrepreneurs and enterprises, their motives and the wider institutional compliance environment in relation to informality. This uses an additive strategy. It introduces sequentially the various sets of characteristics, which allows an analysis of their specific contribution to explaining the level of informality.

Model 1 in Table 4 reports the association between the characteristics of the entrepreneur and the level of informality. The gender coefficient is not significant. For age, education and household income, there is a positive relationship with operating formally, or at least on a less informal basis. Older entrepreneurs aged 35 and over are significantly more likely to operate formally than younger ones (fifteen to 24 years old), as are those with higher levels of education significantly more likely to operate formally than those who did not attend school. So too are those with higher household incomes significantly more likely to operate formally, although this latter relationship is likely to be endogenous. There is no significant association between the level of informality and if the entrepreneur is the main earner, nor any significant association with the number of adults in the household. Overall, this model explains 13.8 percent of the variance in the level of informality as reported by the Pseudo R^2 (compared to a model where no explanatory variables are introduced).

Model 2 adds enterprise characteristics to these characteristics of entrepreneurs. None of the entrepreneurs' characteristics in model 1 change their significance or direction of association. In addition, this model reveals that older enterprises are significantly more likely to operate formally than enterprises less than five years old. So too are enterprises in the hotel catering sector significantly less likely to operate more formally than enterprises

in the retail sector. For those in manufacturing, the relationship is also negative but not significant. No significant associations are found between the level of informality and if the entrepreneur started the business alone or with others, whether the enterprise was self-funded or not and whether they applied for a bank loan. Overall, model 2 explains 16.6 percent of the variance in the level of informality, which is slightly higher than model 1, highlighting the importance of combining both enterprise end entrepreneur characteristics when explaining the level of informality.

Table 4. Ordered logistic regression for the determinants of the degree of informality in Accra, Ghana

Variables	Model 1	Model 2	Model 3
<i>Entrepreneurs' factors</i>			
Female	0.091 (0.343)	0.309 (0.349)	0.345 (0.352)
Age (15–24)			
25–35	1.115** (0.481)	1.148** (0.489)	1.063** (0.501)
35+	1.662*** (0.555)	1.795*** (0.553)	1.831*** (0.566)
Education (Never been to school)			
Primary	0.583 (1.017)	0.679 (1.077)	0.786 (1.095)
Junior high school	0.596 (0.591)	0.444 (0.641)	0.390 (0.643)
Senior high school	0.970* (0.553)	1.097* (0.590)	1.158** (0.583)
Diploma	1.815*** (0.563)	1.928*** (0.623)	2.050*** (0.651)
University	2.558*** (0.575)	2.958*** (0.660)	3.048*** (0.637)
Four or more adults in household	-0.151 (0.323)	-0.202 (0.331)	-0.139 (0.340)
Main income earner	-0.166 (0.382)	-0.309 (0.399)	-0.366 (0.400)
Household income per month (less than 500 C ¹)			
501–1000 C	0.210 (0.525)	0.136 (0.542)	0.137 (0.527)
1001–1500 C	0.009 (0.606)	-0.0186 (0.645)	0.018 (0.634)
1501–2000 C	0.546 (0.569)	0.290 (0.582)	0.316 (0.566)
Above 2000 C	1.462*** (0.555)	1.309** (0.544)	1.417*** (0.526)
<i>Enterprise factors</i>			
Firm's age (less than 5 years)			
5–10 years		0.234 (0.397)	0.265 (0.396)
11–15 years		0.587 (0.633)	0.540 (0.628)
Above 15 years		1.501** (0.661)	1.436** (0.667)
Sector of activity (Retail)			
Manufacturing		-0.159 (0.500)	-0.255 (0.514)
Hotel catering		-0.818 (0.504)	-0.912* (0.516)
Business started (Alone)			
With business partners		0.631 (1.030)	0.558 (1.043)
Family		0.101 (0.515)	0.007 (0.526)
Self-funding		0.790 (0.598)	0.845 (0.590)
Applied for a bank loan		0.328 (0.354)	0.314 (0.358)
<i>Exclusion perspective</i>			
Could not get a regular job			-0.216 (0.345)
Needed additional income			-0.469 (0.437)
Cut-off 1: Constant	1.447* (0.851)	2.426** (1.080)	2.317** (1.096)
Cut-off 2: Constant	3.394*** (0.881)	4.472*** (1.134)	4.372*** (1.144)
Cut-off 3: Constant	5.400*** (0.937)	6.592*** (1.234)	6.516*** (1.237)
N	171	171	171
Wald chi2	59.35	72.69	74.90
Prob. > chi2	0.000	0.000	0.000
Pseudo R2	0.138	0.166	0.171

Table 4 continued. Ordered logistic regression for the determinants of the degree of informality in Accra, Ghana

Variables	Model 4	Model 5
<i>Entrepreneurs' factors</i>		
Female	0.305 (0.388)	0.234 (0.416)
Age (15–24)		
25–35	1.411** (0.593)	1.051* (0.637)
35+	2.349*** (0.679)	2.158*** (0.668)
Education (Never been to school)		
Primary	0.318 (0.989)	-0.035 (1.043)
Junior high school	0.475 (0.668)	0.836 (0.664)
Senior high school	1.236* (0.637)	1.418** (0.631)
Diploma	2.223*** (0.764)	2.791*** (0.797)
University	3.313*** (0.780)	3.700*** (0.753)
Four or more adults in household	-0.220 (0.405)	-0.282 (0.383)
Main income earner	-0.532 (0.518)	-0.562 (0.523)
Household income per month (less than 500 C ¹)		
501–1000 C	0.808 (0.617)	0.645 (0.674)
1001–1500 C	0.456 (0.718)	0.394 (0.752)
1501–2000 C	0.484 (0.590)	0.273 (0.624)
Above 2000 C	1.649*** (0.595)	1.663*** (0.627)
<i>Enterprise factors</i>		
Firm's age (less than 5 years)		
5–10 years	0.398 (0.458)	0.382 (0.469)
11–15 years	1.069 (0.701)	1.292** (0.652)
Above 15 years	1.378* (0.789)	1.879** (0.764)
Sector of activity (Retail)		
Manufacturing	-0.342 (0.565)	-0.402 (0.583)
Hotel catering	-0.836 (0.514)	-0.738 (0.512)
Business started (Alone)		
With business partners	0.377 (1.188)	0.100 (1.190)
Family	-0.021 (0.590)	-0.241 (0.584)
Self-funding	0.835 (0.563)	0.799 (0.570)
Applied for a bank loan	0.316 (0.382)	0.201 (0.395)
<i>Exclusion perspective</i>		
Could not get a regular job	-0.368 (0.358)	-0.393 (0.366)
Needed additional income	-0.345 (0.458)	-0.446 (0.456)
<i>Exit rationales</i>		
Resentment	-1.177** (0.504)	-1.341** (0.550)
High taxes	0.385 (0.408)	0.397 (0.394)
High registration cost	-0.573 (0.400)	-0.604 (0.385)
Complicated registration system	0.002 (0.388)	0.017 (0.395)
Corrupt registration system	-1.174** (0.521)	-1.149** (0.557)
Unawareness of registration	1.076** (0.532)	0.968* (0.577)

Table 4 continued. Ordered logistic regression for the determinants of the degree of informality in Accra, Ghana

<i>Social climate for doing business informally</i>		
<i>Micro-level trust (personal norms)</i>		
Acceptable to run an unregistered business		
(Highly acceptable)		
Somewhat acceptable		0.717 (0.568)
Not acceptable		0.725 (0.595)
<i>Mezzo-level trust</i>		
Common practice in the family		-1.203** (0.509)
<i>Macro-level trust</i>		
All the similar businesses are not registered		-0.936** (0.462)
Cut-off 1: Constant	2.795** (1.277)	2.056 (1.429)
Cut-off 2: Constant	5.033*** (1.373)	4.431*** (1.497)
Cut-off 3: Constant	7.372*** (1.476)	6.846*** (1.575)
N	171	171
Wald chi2	78.72	97.99
Prob. > chi2	0.000	0.000
Pseudo R2	0.219	0.243

Significant at *** p<0.01, ** p<0.05, * p<0.1; Robust standard errors in parentheses

Source: 2016 survey of Accra, Ghana

Model 3 adds to these entrepreneur and enterprise characteristics the exclusion rationales for doing business informally. It should be noted that none of the exclusion rationales are significantly associated with the level of informality. Nevertheless, adding the exclusion rationales means that model 3 explains 17.1 percent of the variance in the level of informality, which is slightly higher than model 2.

Model 4 adds to these entrepreneur and enterprise characteristics, and exclusion rationales, the exit rationales for doing business informally. Again, none of the entrepreneur and enterprise characteristics change their significance or direction of association when these are added. The only exit rationales significantly associated with the level of informality are the view that the state does not do anything for the people so why should they obey the law (i.e., a lack of vertical trust), the perception of public sector corruption (i.e., another measure of a lack of vertical trust) and a lack of awareness of the need for registration. These are significantly associated with a lower likelihood of doing business formally. No significant association is identified between the level of informality and the perceptions that taxes are too high and registration costs are too high. However, the overall fit of the model increases by nearly five percent when these exit rationales are added, from a Pseudo R² of 17.1 percent to 21.9 percent.

Finally, model 5 presents the full specification adding to the entrepreneur and enterprise characteristics and exit rationales the wider institutional compliance environment regarding informality. Although the perceived acceptability of doing business informally is not significantly associated with the level of informality, there is a significant association between the level of informality and both whether it is viewed as a common practice in the family (i.e., personal norms) and whether entrepreneurs view all other enterprises as operating informally (i.e., a lack of horizontal trust). Those who view informality as a family practice (i.e., personal norm of informality) and those viewing other similar

businesses as operating informally (i.e., those lacking horizontal trust), are significantly more likely to operate at higher levels of informality. The overall fit of the model increases by just under an additional three percent when these indicators of the wider institutional compliance environment are added, to a Pseudo R^2 for the full model of 24.3 percent.

Therefore, the variance in the level of informality is explained by not only specific characteristics of the entrepreneurs and enterprises, namely that higher levels of informality are significantly associated with younger entrepreneurs, lower levels of educational attainment, lower household incomes, younger enterprises, but also the wider institutional compliance environment. Higher levels of informality are present among entrepreneurs unaware of the need for registration, who lack vertical trust (i.e., do not believe the state does anything for them, and perceive there to be public sector corruption), view informality as normal (i.e., a normal practice in their family) and view all similar businesses as operating informally (i.e., lack horizontal trust).

To portray graphically this significant association between the institutional compliance environment and the level of informality, Figure 1 shows the predicted probabilities of operating at various levels of informality for a representative entrepreneur and enterprise in Accra. Figure 1A reveals that the predicted probability (for the representative entrepreneur) of operating totally informal is three percent if the entrepreneur considers that “the state does not do anything for the people so why should they obey the law” (i.e., there is a lack of vertical trust by the entrepreneur in the state), but 0.8 percent if they disagree with this. The predicted probability of operating totally formal is 21 percent if the entrepreneur agrees that the state does not do anything for the people but 51 percent if they disagree with this statement and view the state as providing public services. As Figure 1B similarly reveals, the predicted probability (for the representative entrepreneur) of operating totally informal is higher if the entrepreneur views there to be public sector corruption in relation to registering enterprises. So too is there a steep fall in the predicted probability of operating totally formal if the entrepreneur agrees that there is public sector corruption in the firm registration process. Therefore, this graphically displays the significant association between informality and vertical trust for the presentative entrepreneur and enterprise.

Figure 1A. Predicted probabilities of doing business at varying levels of informality for a representative entrepreneur and enterprise, by measures of vertical trust

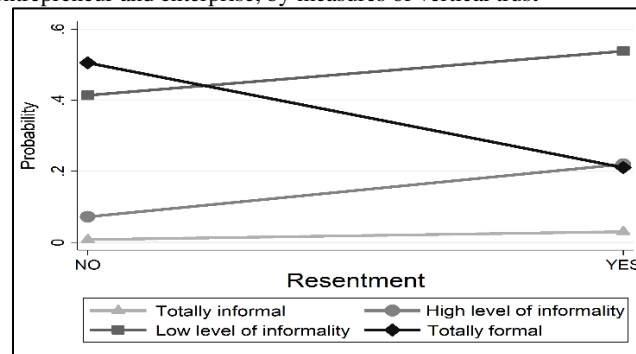
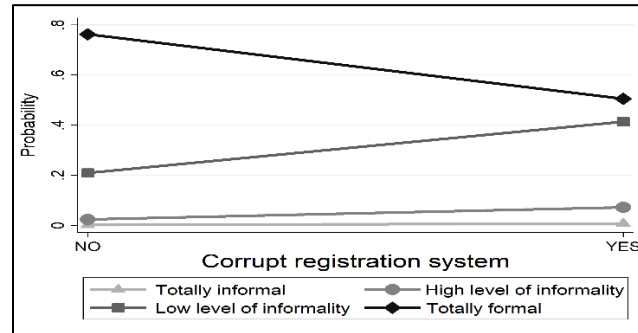


Figure 1B. Predicted probabilities of doing business at varying levels of informality for a representative entrepreneur and enterprise, by measures of vertical trust



Meanwhile, Figure 2 graphically portrays these predicted probabilities of operating informally by their views on personal norms and horizontal trust. Figure 2A reveals that when the representative entrepreneur says it is a common practice to work informally in their family (i.e., it is a personal norm), then the predicted odds of operating at higher degrees of informality are greater than when this is not the case. Figure 2B similarly reveals that when the representative entrepreneur believes all similar businesses are not registered (i.e., there is lack of horizontal trust), the predicted odds of them operating informally is much greater than when they do not believe that this is the case.

Figure 2A. Predicted probabilities of doing business at varying levels of informality for a representative entrepreneur and enterprise, by personal norms and horizontal trust

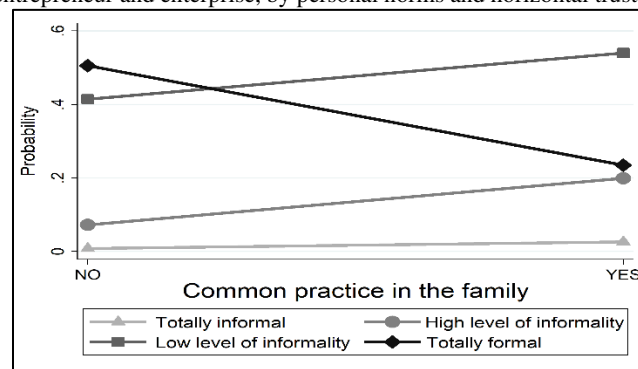
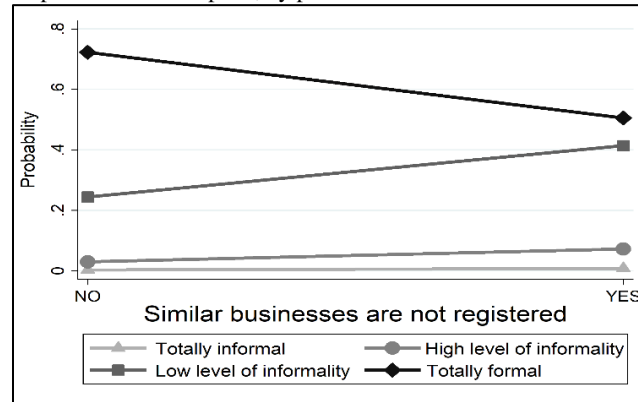


Figure 2B. Predicted probabilities of doing business at varying levels of informality for a representative entrepreneur and enterprise, by personal norms and horizontal trust



Hence, Figures 1 and 2 graphically show that for the representative entrepreneur, the predicted probability of operating informally steeply increases if there is: a lack of vertical trust; a perception that operating unregistered is a common practice in the family, or a lack of horizontal trust.

5. Conclusions

Despite the burgeoning literature on informal entrepreneurship, there has so far been few attempts to estimate and explain the degrees of informalization of entrepreneurs and enterprises. Reporting a survey of 171 enterprises in the city of Accra in Ghana, this paper has revealed that 21 percent were totally informal enterprises and sixteen percent totally formal. Therefore, nearly two-thirds of the enterprises were neither totally informal nor totally formal (i.e., 33 percent displaying a high level of informality and 30 percent a low level of informality). This justifies the need for future studies to analyze the degree of informalization of enterprises. The majority of enterprises are not either wholly formal or wholly informal but rather, are partially (in)formal.

Examining the major determinants of the level of informality of enterprises, the finding is that it is a mix of the characteristics of the entrepreneur and enterprise, and the wider institutional environment. Higher levels of informality are significantly associated with younger entrepreneurs, lower levels of educational attainment, lower household incomes and younger enterprises. Informality is also higher among entrepreneurs unaware of the need for registration, those who lack vertical trust (i.e., do not believe the state does anything for them, and perceive there to be public sector corruption), view informality as normal (i.e., a normal practice in their family) and view all similar businesses as operating informally (i.e., lack horizontal trust).

In terms of theoretical advances, the outcome is that this paper makes three contributions. First, this study displays that treating all enterprises and entrepreneurs as either wholly informal or wholly formal is a mistake. The majority are neither wholly formal nor wholly informal. Therefore, there is a need to theorize a spectrum of enterprises

and entrepreneurs from wholly formal to wholly informal. Second, this study reveals the significant association between the level of informality and the characteristics of entrepreneurs and enterprises. Higher levels of informality are significantly associated with younger entrepreneurs, lower levels of educational attainment, lower household incomes and younger enterprises. The third contribution is that it reveals that the wider institutional compliance environment is a determinant of the level of informality. A lack of awareness of the need for registration, a lack of vertical trust, personal norms and a lack of horizontal trust are significantly associated with higher levels of informality. This markedly varies to the only previous quantitative study in Pakistan, which finds that only socio-demographic characteristics are significantly associated with the degree of informality and that the wider institutional compliance environment is not (Williams and Shahid, 2015). Given this, there is a need to evaluate in future studies what associations hold in other localities, regions and nations when explaining the contrasting levels of informality of entrepreneurs and enterprises.

In terms of policy implications, the major contribution of this paper is that by revealing that the characteristics of entrepreneurs and enterprises are strongly associated with varying levels of informality, as well as the wider institutional compliance environment, policy approaches for tackling informality will need to deal with all of these factors. By identifying that higher levels of informality are associated with younger age groups, those with lower levels of education and lower incomes and younger enterprises, it intimates that tackling informality requires greater emphasis on initiatives so far seldom considered. These policy initiatives include improving educational attainment and the use of older entrepreneurs as local role models for younger entrepreneurs. It also reveals there is a need to address the lack of vertical trust and horizontal trust, as well as personal norms. This requires an emphasis on pursuing formal institutional changes such as reducing public sector corruption along with changes in the values, norms and beliefs of entrepreneurs (OECD 2015; Williams, 2017).

In sum, if this paper encourages a theoretical and empirical shift in future studies toward evaluating and explaining the different levels of informality of enterprises, then it will have achieved its major objective. If this then leads to the development of policy approaches that recognize how different types of intervention are required at different levels of formality, and evaluations of what policy measures can achieve this, then it will have achieved its wider intention.

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